National Weather Service: Lubbock, TX

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Two year Review Edition
October 2013

The West Texas Twister

INSIDE THIS ISSUE:

West Texas Weather Review: 2012-Present	1
Dual-Polarization Radar	2
The West Texas Lightning Mapping Array	3
February 2013 Blizzard!	4
Weather Comparison Articles	5-8
Other Notable Weather Events	9
Length of Service Awards	10
New Hires/Retirees	11

WELCOME MESSAGE FROM THE METEOROLOGIST-IN-CHARGE: JUSTIN WEAVER

Hello and welcome to the 2013 two year review edition of the National Weather Service (NWS) Lubbock Newsletter! As Meteorologist-in-Charge at NWS Lubbock, I oversee all aspects of our meteorological, hydrological and climatological programs. It is the responsibility of NWS Lubbock to provide the citizens of the South Plains, Rolling Plains and extreme southern Texas Panhandle with timely and accurate weather warnings, forecasts and data. We have seen quite a few changes since our last edition of this newsletter. The first major upgrade to the WSR-88D Doppler Radar, known as Dual-Polarization, was completed in April of 2013. This was the most significant upgrade since power was turned on to the radar in March of 1994!

The region has also experienced typical severe thunderstorms and tornadoes, a crippling blizzard, spring dust storms and a well-publicized haboob, all while in the midst of a historic drought. Our expert staff of meteorologists will be tackling these topics and more in this newsletter edition. Finally, I would like to make sure all of our readers know that the NWS is a Federal Government agency under the National Oceanic and Atmospheric Administration of the U.S. Department of Commerce. Of course that means we are funded by the American taxpayer and I would like to invite you for a tour of our facility in Lubbock. Just drop me an email at *justin.weaver@noaa.gov or call 806-745-4260* if you would like to make a visit to our office. Otherwise, I hope you enjoy the latest edition of our newsletter and wish you and your loved ones a safe, warm and joyful upcoming holiday season.

West Texas Weather Review: 2012-Present

BY: FELECIA BOWSER

Despite continued long-term drought conditions, the region saw a lull in wildfire activity during 2012. This trend was likely due to reduced vegetation as a result of extremely dry conditions during the previous warm season. The lack of vegetation unfortunately helped expose the topsoil and primed the area for intense dust storms anytime strong winds were generated. Periodic dust events during the year culminated with what would be the longest duration dust storm in decades on December 19th. Similar to wild fire activity, the West Texas severe weather season, which usually takes place April, May and June, was also relatively quiet in 2012. Although the number of severe weather days was less than normal, we still saw some significant episodes including May 30th when storms generated hail up to baseball size, severe downburst winds and tornadoes near the community of Paducah. Mid-June brought another active period of showers and storms with 1-3 inches of rainfall over a fairly wide area during a week long period. The fall brought more active weather as the South Plains Fair was interrupted by heavy rainfall and damaging winds when a line of storms swept through the region. More scattered storms brought very large hail up to baseball size on October 12th along with some brief tornadoes in Hale County. The year ended with a rare white Christmas, for the second straight year when areas mostly on the Caprock saw anywhere from a trace up to five inches of snow. The last time back-to-back white Christmases happened was in 1947/1948. The weather in 2013 started out fast and furious with a major blizzard on February 25th that produced snow amounts up to a foot for some locations. Large destructive hail and tornadoes followed during the spring, while flooding rains occurred earlier this summer. Needless to say, 2013 has kept us steadily busy! This edition of the West Texas Twister will not only discuss some of the individual events of 2012 and 2013 but also compare weather events that span multiple seasons. We hope you enjoy this newsletter!

Dual-Polarization Radar has arrived in Lubbock!

BY: JASON JORDAN

The original WSR-88D Radar, or NEXRAD radar system, was developed in the late 1970s and early 1980s. When the original system was constructed in 1988, it was considered state-of-the-art. However, advances in the science of radar meteorology, computer hardware and software, and increased need for more accurate information about what *type* of precipitation was being detected by the NEXRAD radar, started the process of implementing a major upgrade to the NEXRAD radar. This new upgrade is what has been referred to as "Dual-Pol" which is a shortened version of Dual Polarization.

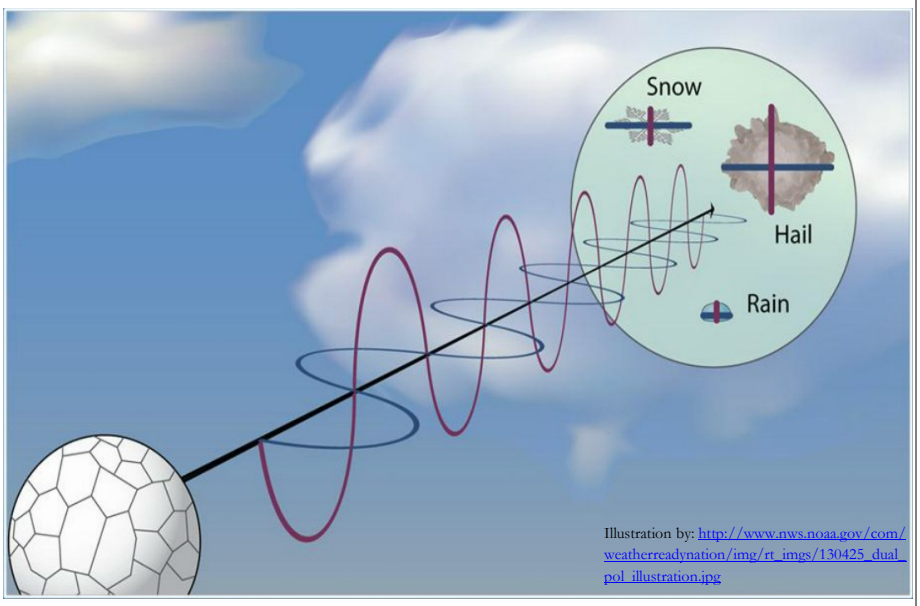
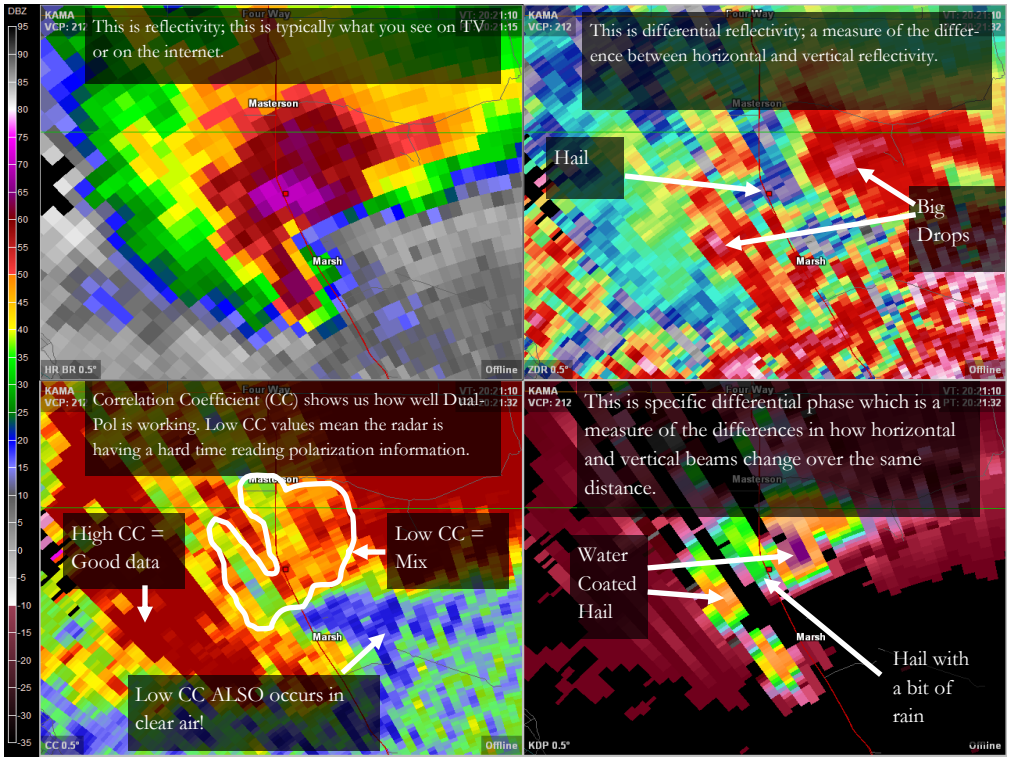


Illustration by: http://www.nws.noaa.gov/com/weatherreadynation/img/rt_imgs/130425_dual_pol_illustration.jpg

The picture above shows how the radar is now able to measure the amount of energy coming back from precipitation in two directions; horizontal and vertical ***(the original configuration of the radar was horizontal only)***. These two "polarizations" give the meteorologists more information about the size and shape of the precipitation target and whether snow, rain, hail, or even birds or bugs are being detected!

But what does this actually look like to us on the screen and what can we see? Take a look at this annotated image below from the Amarillo, TX NEXRAD radar with the notes on it. As you can see, we can tell quite a bit about what is going on within a storm! However, we cannot look at just one field and determine what is going on inside an area of precipitation. We have to take all the different fields, evaluate the data from each one, and use our training to better understand what is going inside areas of precipitation.



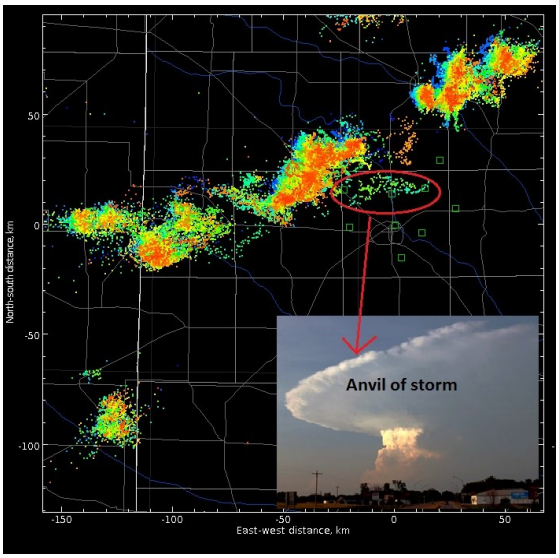
Weather Forecast Office Lubbock's *Shocking* New Weather Tool:

The West Texas Lightning Mapping Array

BY: JENN DANIEL

During severe weather events this past year, you may have seen our office post on Facebook about our newest lightning detection tool known as the West Texas Lightning Mapping Array (WTLMA). The WTLMA is a ten-station network that is managed and provided by the Atmospheric Science Department at Texas Tech University. Our office began receiving live, real-time data in April 2012, and our meteorologists have found it to be not only a neat tool but also very helpful when thunderstorms threaten the South Plains.

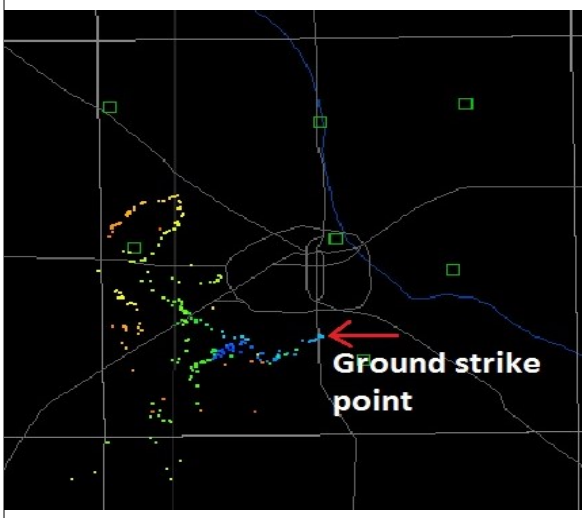
If you've ever driven down the road at night with thunderstorms in the area and heard sharp, loud crackling sounds on an AM radio station, chances are you were hearing the sferics, short for "atmospherics," produced by the lightning. An LMA detects lightning just as an AM receiver does. The WTLMA utilizes a VHF radio receiver tuned to TV channel 3 to listen for the VHF radiation pulse emitted by lightning sources. An LMA differs from other lightning detection networks in that it detects all of the lightning in a storm, not just the cloud-to-ground (CG) flashes. We can even map lightning in 3D!



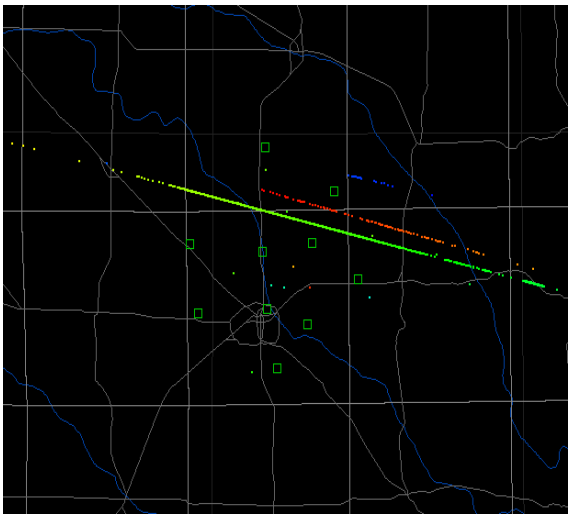
Meteorologists at WFO Lubbock have used the WTLMA to fill in the gaps between radar scans. Typically, a full radar scan through the atmosphere takes 5-6 minutes to complete. The WTLMA provides data at a much faster rate, giving us an idea of what is happening in a storm before the next radar scan comes in. The WTLMA has shown new storms developing before they're seen on radar, and it has also been able to give us clues onto whether a storm is getting stronger or weaker. We have been able to see anvil flashes that extend 10 miles or more ahead of the main line of storms as the photo on the right shows.

Forecasters have the ability to look at all the lightning that has occurred in an entire day or zoom down to a single flash. The picture at the bottom left shows a single CG flash that spreads across the southwestern quarter of Lubbock County before striking the ground near the intersection of US 87 and FM1585.

Finally, another interesting artifact that has been seen on the LMA is an aircraft flying over the South Plains. A long streak appears (as seen at the bottom right) when planes fly through clouds made of ice crystals. The ice crystals cause a charge to build up on the skin of the aircraft, which can be detected by the LMA as the charge is bled off from the wingtip corona points. Be watching our Facebook page in the coming months to see what new, exciting features we find in the lightning that flashes across the West Texas skies!



NWS Lubbock meteorologists have and will continue to use this useful tool!



February 2013 Blizzard!

BY: JONTHAN GUSEMAN

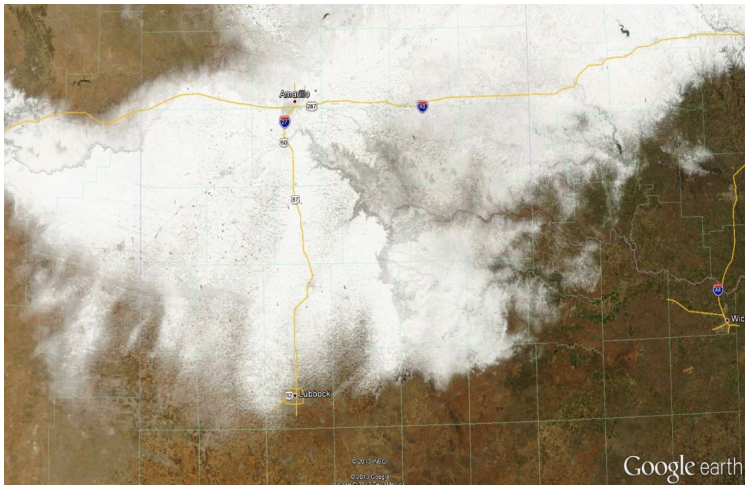
Tulia, TX

Photo by: Tulia Cooperative Observer

Ropesville, TX

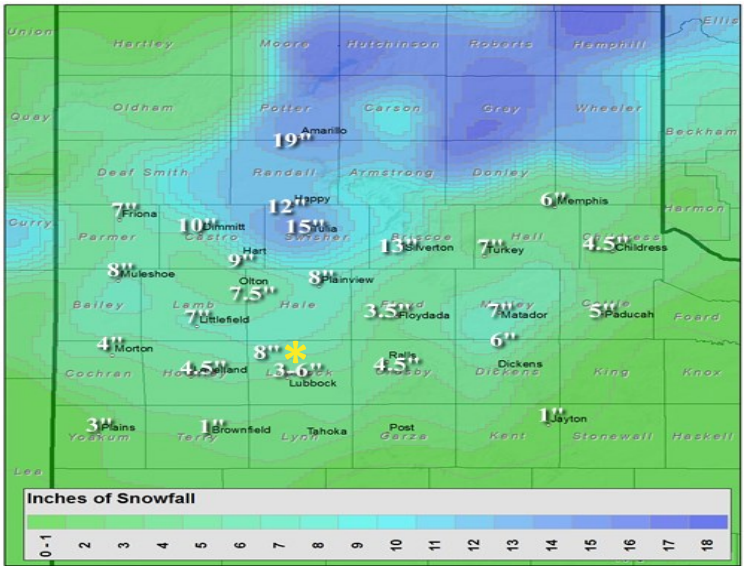
Photo by: Wes Burgett

A significant winter storm occurred across West Texas from late Sunday February 24th through Monday February 25th. Widespread heavy snowfall occurred from the Texas panhandle through the northern and central South Plains and northern Rolling Plains. Amounts of over one foot of snow were measured across portions of Swisher and Briscoe Counties, with Tulia receiving the highest recorded amount of 15 inches. Strong north winds, with gusts peaking near 70 mph at the height of the storm, reduced visibilities to near zero and produced several snow drifts nearing 10 feet in spots. These strong winds combined with the heavy snow made for treacherous roadways and dangerous traveling conditions. Interstate 27 was closed for several hours between Lubbock and Amarillo and numerous vehicle became stranded or involved in accidents throughout the day. Lubbock Preston Smith International Airport was also shut down to all incoming and outgoing traffic. The high-resolution satellite image below shows the extent of the snowfall remaining on the ground across the region the following day.



This storm took place due to a vigorous upper-level disturbance which dove south from Colorado into New Mexico, drawing up abundant moisture out of the Gulf of Mexico and intensifying as it pushed east toward West Texas. At the surface, a strong cold front pushed through the Texas panhandle and South Plains Sunday night, transitioning rain showers to sleet and snow. A couple of severe thunderstorms impacted locations in the Rolling Plains ahead of this front, with one storm producing half-dollar sized hail near Jayton, TX. Snow continued to fall Monday across the Texas panhandle, South Plains, and Rolling Plains as the storm system tracked east into western Oklahoma by evening.

Final snowfall reports compiled from National Weather Service cooperative observers and the Community Collaborative Rain, Hail and Snow (CoCoRaHS) Network observers, are shown in the figure to the right.

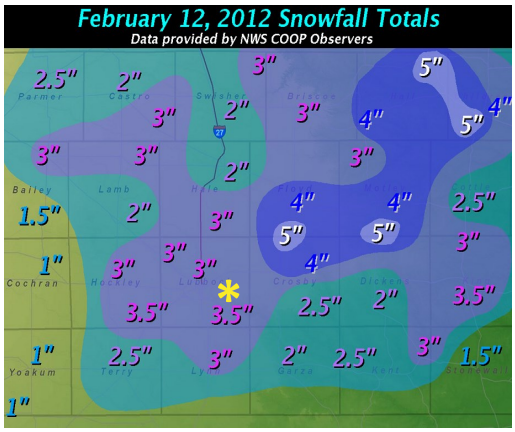


A Tale of Two Snowstorms in 2012: Valentine's Weekend and Christmas Day

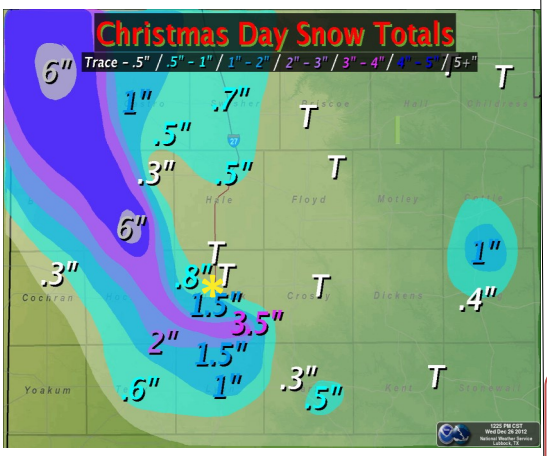
BY: MATT ZIEBELL

White Christmases are a relatively infrequent occurrence on the Texas South Plains, but in 2012 parts of the region experienced this rare event two times in as many years! However, this was not the first big snow event of 2012 as at least four prior snowstorms visited the region that year.

One such storm occurred on February 12th, two days before St. Valentine's Day, and produced widespread measurable snow between 1 and 5 inches as seen on the map below. Compared to the Christmas Day storm, the February 12th storm was far more efficient in distributing measurable snow over the region. As can be seen in the snowfall total graphics to the right, the Christmas Day storm resulted in a narrow swath of heavy snow of 3 to 6 inches deep from just south of Lubbock, northwest along Clovis Highway, and north to Dimmitt. Outside of this swath, very little if any snow was recorded over the remainder of the region.



So why was the snowstorm of February 12th so much more generous with measurable snow over the entire region? The answer to this lies in the behavior of the parent storm systems and the airmasses they encountered. The snowstorm of Sunday, February 12th began with an Arctic airmass over much of west Texas where high temperatures on the South Plains only reached the 20s. Although weak, a disturbance aloft moved east from New Mexico early that Sunday morning ahead of very mild temperatures in the 50s and 60s. On the Texas South Plains, this dome of warm air was forced atop the cold air near the surface and resulted in several hours of light snow lasting from early morning through the evening. As the cold air was gradually replaced by warmer air over time, snow transitioned into freezing drizzle which deposited a thin layer of ice on roads. This ice exacerbated travel conditions as many roads were already snow covered and hazardous. Even though precipitation had ended by late Sunday night, Monday morning commuters faced treacherous roads and several schools cancelled classes for the day. In Lubbock alone, over 300 vehicle accidents were reported. Ironically, all of the snow and ice vanished by the afternoon as breezy southwest winds ushered in temperatures in the 60s!



On the other hand, the Christmas Day snowstorm involved a deep and slow-moving storm system that pulled a very dry airmass (dry slot) around a large portion of its circulation. This dry slot greatly limited snow production over all but a narrow corridor of the northwest and southern South Plains. Here, a zone of strong lift along the northwest side of the storm system teamed with a leftover band of moisture immediately ahead of the dry slot. The result was a nearly stationary axis of moderate snow on Christmas morning reaching from Slaton and Wolfforth northwest to Farwell and Dimmitt.

Unlike the February 12th storm, much colder air filtered in behind the Christmas Day storm complete with blustery winds and wind chills as low as 0° F by nighttime. Fortunately, travel inconveniences were far less common as most holiday travelers had already reached their destination.

Snowy roads in Lubbock from the February 12th snowstorm

If you ever desire the state of Texas road conditions call TxDOT at:

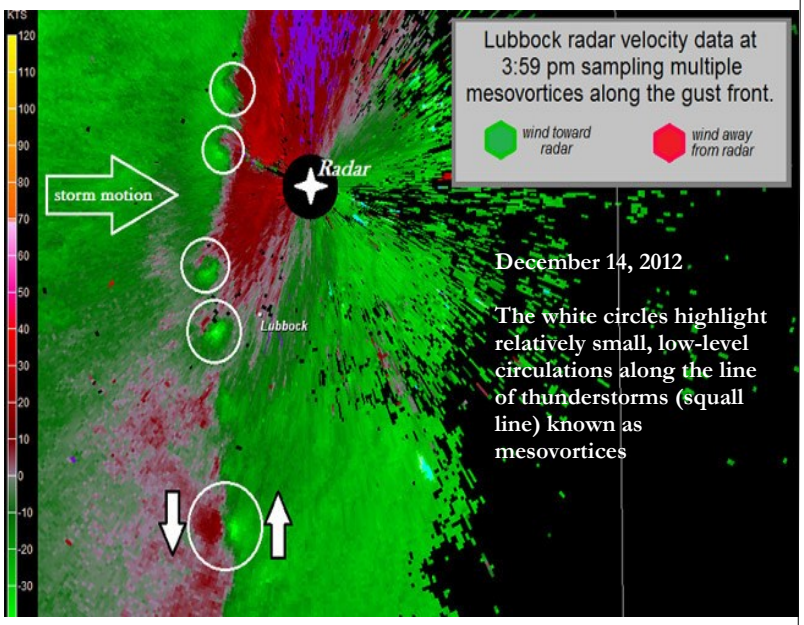
1-800-452-9292

Winter and Spring Squall Line Comparison

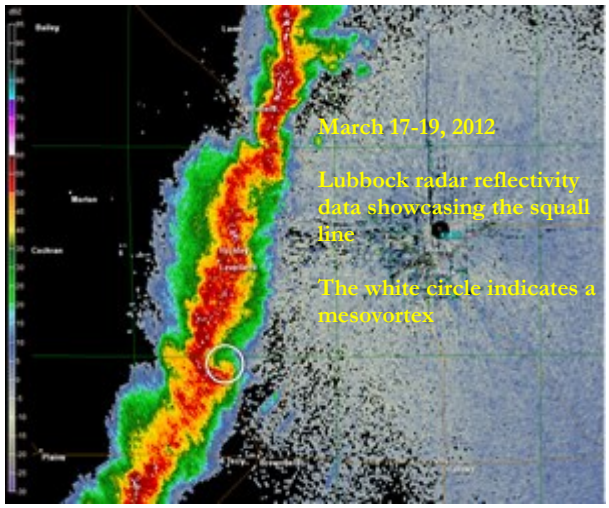
BY: CHARLES ALDRICH

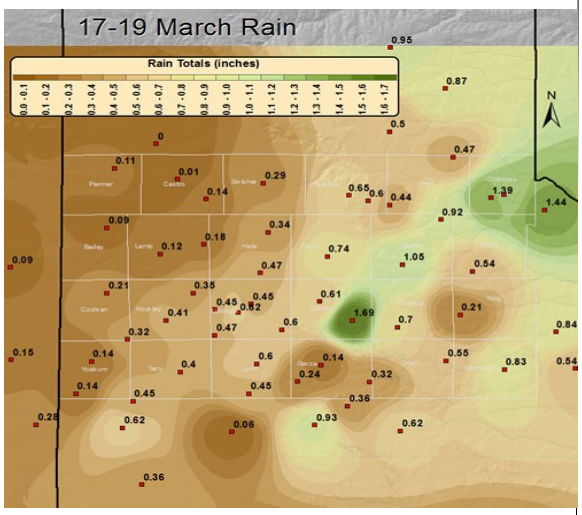
On March 18-19, 2012, a squall line moved through West Texas bringing much needed rainfall after suffering for over a year with a moderate to severe drought. A similar event occurred on December 14, 2012 as well that also brought much needed rainfall. Both events produced hail and damaging wind which were associated with a pacific front. The main differences between the two were that the March event happened over a two day period and had higher moisture availability.

Both squall line events had similar upper level wind patterns. The squall line on December 14th had one major advantage over the March 18th-19th squall line, and that was a deeper and thus stronger upper level low pressure system which gave way to a stouter squall line. As the December squall line proceeded east across the South Plains and Texas Panhandle, higher wind speeds developed aloft and made it to the surface. The highest wind speed recorded was 77 miles per hour via a West Texas Mesonet station located on the west side of the Texas Tech campus. Also, as a result of prolonged drought conditions, a wall of dust, also known as a haboob, was present ahead of the squall line. Though rain did result from the squall line, the maximum recorded rainfall amount was much less than the March squall line. The highest rainfall amount recorded from all West Texas Mesonets during the December storm was 0.39 inches in Memphis, TX, versus 1.69 inches of rainfall at White River Lake during the March event. As the squall line moved closer to the Lubbock, TX, radar it detected several small low level circulations along the leading edge of the squall line known as mesovortices as indicated in the figure to the right. No tornadoes were reported with any of these circulations.



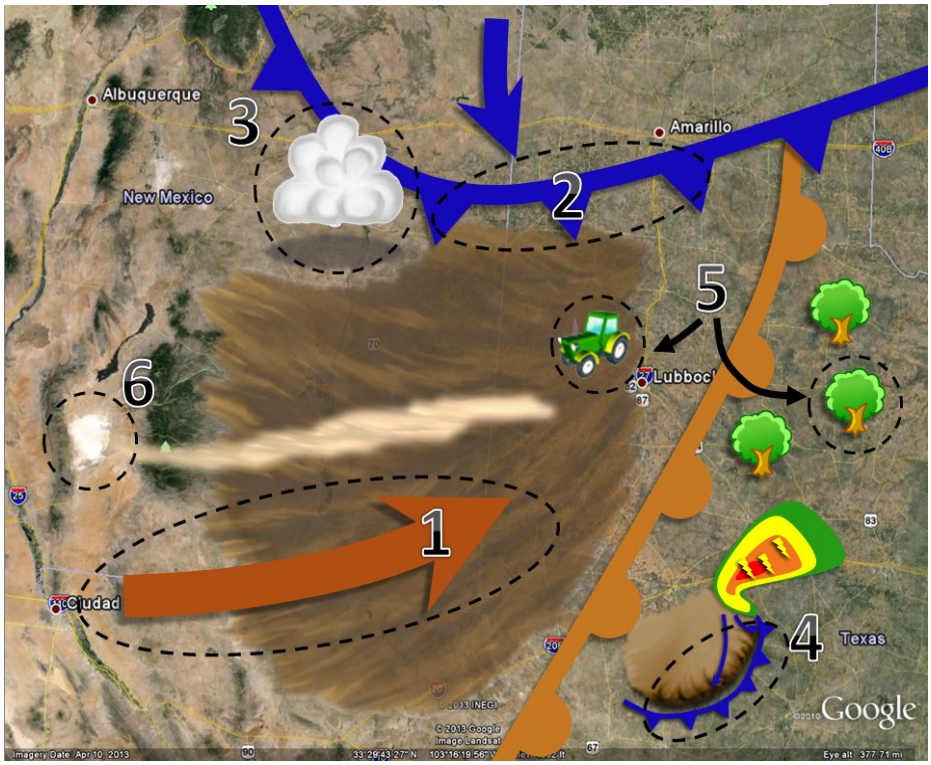
On March 18th, a dryline developed near the Texas and New Mexico state line. It produced little precipitation activity as it progressed eastward across the South Plains. However, after it moved off the Caprock into the Rolling Plains, it encountered rich Gulf moisture which helped produce several severe thunderstorms which produced up to golfball sized hail and damaging winds to 74 miles per hour. The dryline retreated westward on the night of the 18th back towards the Texas and New Mexico state line. What makes this event unique is that by 19th, the dryline collided with the pacific front across the west South Plains which combined with rich Gulf of Mexico moisture to develop a squall line that provided heavy rains. Lighter rainfall amounts were experienced during the initial development of the squall line, 0.1 inches on average, across the west South Plains and west Texas Panhandle. As the squall line moved closer to the Rolling Plains, rainfall amounts began to increase to 0.5 inches on average. The highest amount recorded by the West Texas Mesonets was at White River Lake which was 1.69 inches. Similar to the December squall line, the Lubbock, TX radar indicated a mesovortex along the leading edge of the squall line, as shown in the figure to the right. It developed near the Hockley/Lynn county line which moved northeastward into west Lubbock County. This circulation displayed a hook echo on radar and a well-developed area of low level circulation. It was also sampled by the Texas Tech mobile Doppler radar. Despite signs from both radars that a tornado may be on the ground, one was not reported as it moved over empty farmland.





Anatomy of a Dust Storm

BY: BRAD CHARBONEAU



Residents of West Texas are no strangers to dust storms, as a variety of meteorological, geographical, and agricultural factors combine to create them multiple times per year on the South Plains. Often times these furious storms reduce visibilities to near zero and persist for several hours at a time, forcing traffic to a standstill or unfortunately, resulting in fatal accidents. In fact, while tornadoes, lightning, and flooding receive much more attention nationwide, blowing dust has resulted in more deaths over the past 10 years within the Lubbock forecast area than any other meteorological phenomenon. 2012 was no exception either as several significant dust storms impacted the city of Lubbock and the surrounding area. So what makes the South Plains so prone to blowing dust? Well, there isn't one single factor that leads to such a high frequency of blowing dust by itself, but rather a multitude of ingredients which combine to create the "perfect dust storm" of sorts across the area. The first, and probably most obvious, is wind. We have a lot of it! Frequent strong winds, often times originating from the west or southwest **(1),** are generated by strong upper level storm systems that pass through the area from autumn through late spring. Dust storms resulting from this type of weather pattern typically build gradually through the day as wind speeds start out weak in the early morning, and gradually increase as daytime heating helps transport stronger winds from aloft downwards to the surface. This type of dust storm also tends to last for several hours, and was responsible for creating a near record event on December 19th, 2012. This memorable storm lasted longer than any other in the past 35 years, and resulted in a large traffic accident along I-27 in which one person was killed. Other times a strong cold front **(2)** will result in a large dust storm. In this scenario, strong winds behind the front can loft large amounts of dust into the sky. This was seen during an event on March 23, 2013, which is typically near the peak time of year for widespread blowing dust in West Texas. During this event, wind speeds generally stayed low enough during the afternoon to keep most of the dust on the ground. This changed quickly, however, as a strong cold front featuring sustained wind speeds of 40-50 mph blasted through the area, lofting significant amounts of dust in the process. This event wasn't nearly as long lasting as the previously mentioned one, largely due to the presence of persistent cloud cover during the early afternoon. These clouds **(3)** often present significant challenges when forecasting future dust events, as they often significantly reduce daytime heating and prevent the strongest winds from reaching the surface. Another type of dust storm, and one that may strike much more suddenly and with equal or even worse visibilities, is called a haboob. This is a very specific type of dust storm that is often caused when strong thunderstorm winds pick up large amounts of dust quickly and move across a very short distance, resulting in what appears to be a very intimidating "wall" of dirt **(4)**. Haboobs may drop visibilities to near zero within seconds, and are especially dangerous to motorists given their sudden onset. This year, several haboobs were noted across the region, including one particularly memorable one which occurred on St. Patrick's Day in the city of Lubbock. In addition to just favorable weather patterns, the predominance of agriculture across the south plains **(5)** as opposed to the relatively dense vegetation of the rolling plains also results in vast, open expanses of land with little to hold loose dirt in place. This is the primary reason why strong west and southwest winds tend to produce the most frequent and intense dust storms, as there is simply a lot more available dust in these areas, especially after the fall harvest. In addition, lofted dust also exhibits different colors depending on the source of the dust. Occasionally, white dust originating from the White Sands National Park in New Mexico **(6)** can be lofted across the mountains and into West Texas. Dust storms have been a major part of the weather in this region throughout history, and will continue to be for a long time to come. Regardless of what causes them, all varieties of dust storms can be dangerous if they are not treated with proper respect. If a dust storm appears imminent, please do not attempt to drive through it if at all possible. If travel is unavoidable remember to keep your headlights on, slow down and increase following distances. Avoid pulling over to the side of the road where others may crash into you!

June 2013: Thunderstorms Blast West Texas with a Potpourri of Impacts

BY: GARY SKWIRA

June of 2013 brought a number of rounds of diverse and impactful severe weather to the South Plains region. The active weather really kicked off in full force on Wednesday, June 5th, when thunderstorms that originated over the higher terrain of eastern New Mexico organized and accelerated southeastward across the South Plains during the evening hours. Initially a supercell (rotating) storm produced hail as large as baseballs and wind gusts as high as 70 mph near Friona. The storms morphed into a complex that raced through the central South Plains with winds measured as high as 84 mph in Wolfforth. These intense winds produced a large swath of damage from Levelland through Lubbock, and Slaton, with extensive damage and power outages across north Lubbock to Slaton. The complex of thunderstorms eventually weakened as it moved into the Rolling Plains, though it did drop as much as 2 to 4+ inches of rain there before finally diminishing Thursday morning.

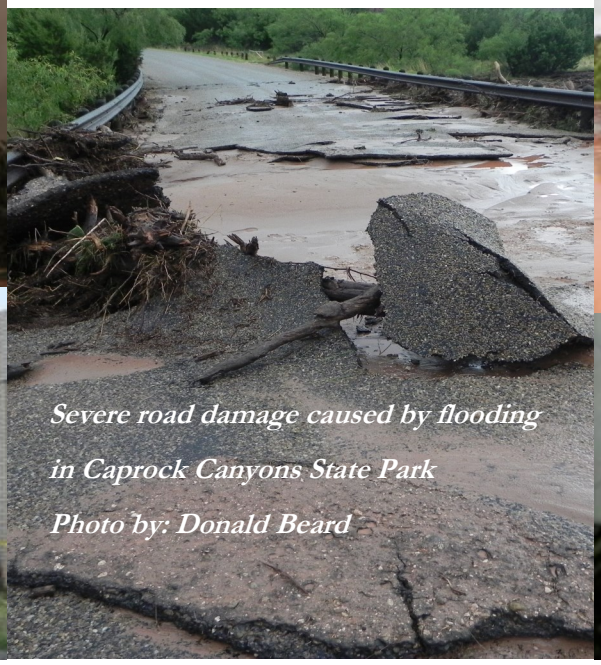
After a bit of a lull, another round of severe thunderstorms struck on Monday, June 17th. A supercell storm formed near the Lubbock Preston Smith International Airport then proceeded to move due south. The storm dropped giant hail as large as grapefruits on the east side of Lubbock. It also moved very slowly and dumped torrential rainfall which resulted in flooding over portions of Lubbock. The intense rain shifted southward over Tahoka where it flooded out two cars on Highway 87. The supercell also produced a wind gust to 74 mph as it moved through O'Donnell late on the 17th.

Just two days later, June 19th, brought a double-shot of extreme weather. The morning delivered a complex of thunderstorms that moved slowly southward across the southeast Texas Panhandle and into the Rolling Plains. This complex did produce straight-line wind damage in several spots including in and around Quitaque, where the top was torn off the old water tower and many pivot irrigation systems were crumbled. Even more impressive was very heavy rainfall that produced widespread flooding across the southeast Panhandle. Caprock Canyons State Park was particularly hard hit as torrential rain rates as high as 12 inches per hour (two-tenths of an inch in one minute) produced copious amounts of runoff and a couple of waves of flooding through the park. Portions of the park recorded over 4 inches of rain, much of which fell in less than one hour. The South Prong of the Little Red River flooded the park road and removed the asphalt in spots. On the positive side, no injuries were reported from the flooding and the intense rainfall helped fill Lake Theo to levels it has not seen in many years!

The early day flooding turned out to be only the first half of the show for June 19th. The morning thunderstorm complex sent a strong outflow westward across the Caprock. The gusty easterly winds lofted suffocating amounts of blowing dust while also strengthening the low-level wind fields. A thunderstorm then developed across southwest Hockley County during the early evening. After becoming established, this storm quickly began to rotate as it utilized the strong wind shear (changing wind speed and direction with height) that was enhanced by the outflow. This storm hurled out baseball size hail and produced a tornado northwest of Sundown. Thankfully, the tornado didn't strike any homes or cause any injuries, but it did down power poles, destroyed oil field equipment, and heavily damaged metal buildings while it was on the ground for about 2.5 miles and 10 minutes. The damage inflicted by the tornado earned it an EF-2 (out of EF-5) rating with maximum winds estimated to 115 mph. After producing the tornado the storm gradually weakened as additional thunderstorm activity moved in from eastern New Mexico and the storms transitioned to locally heavy rain and proficient lightning producers. This incredibly active weather day punctuated the two week period in June of 2013 in which thunderstorms brought diverse impacts ranging from widespread damaging winds in excess of 80 mph to giant hail as big as grapefruits to torrential flooding rains to an EF-2 tornado.

Ragged funnel cloud (possible tornado) near Sundown, TX

Photo by: Bruce Haynie



Severe road damage caused by flooding in Caprock Canyons State Park

Photo by: Donald Beard

Caprock Canyons State Park Flooding

Photo by: Donald Beard

Roof damage inflicted on Lubbock, TX motel

Photo by: Jenn Daniel

Giant hail that fell on the East side of Lubbock, TX

Photo by: Vishy'Le Colbert via FOX 34

List of other Notable Weather Events that occurred in 2012–2013

BY: FELECIA BOWSER

Mobile home hail damage along FM 1585

Photo by: NWS Staff - 4/29/12

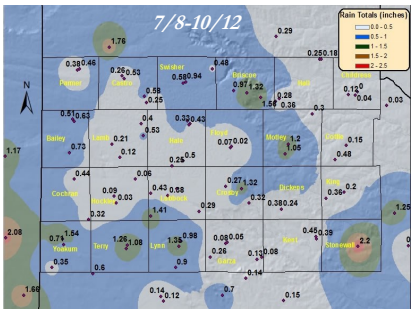
- **Severe Wind and Hail Impacts south Lubbock county –April 29, 2012**

  *A supercell thunderstorm across south Lubbock county produced wind gusts in excess of 80 miles per hour and hail up to the size of baseballs

  *The large hail caused damage to many mobile homes particularly from Farm To Market 41 east of Ropesville, TX to U.S. 87 south of Woodrow, TX

  *Water rose to 2.5 feet over U.S. Highway 82 with additional flooding reported across U.S. Highway 84 making for difficult passage for a tractor trailer

  *Rainfall accumulations were heaviest from near Levelland, TX to just south of Lubbock, TX where 1.5 to 2.0 inches of rainfall fell



- **An Atypical Cool July –July 8th-10th, 2012**

  *A few upper level atmospheric disturbances coupled with a rare summer cold front resulted in rainfall over the course of three days

  *Most locations across the South Plains and Rolling Plains did receive rainfall though heavier amounts were less widespread with heaviest rainfall occurring across portions of the Rolling Plains and the southwestern South Plains

  *As a result of the rainfall and cloud cover high temperatures remained in the 70s and 80s on July 10th

- **April Fools Day Severe Storms –April 1, 2013**

  *Hail up to hen egg size smashed vehicle windshields in Hall and Childress counties

  *Severe thunderstorm wind damage: Tin-roof blown off barn south of Paducah, TX (Cottle county), power poles snapped or blown over west of Quitaque, TX (Briscoe county) and south of Silverton, TX (Briscoe county) respectively, four cars blown off Interstate 27 north of Tulia, TX (Swisher county)

  *Weak short-lived tornado developed southeast of Silverton, TX (Briscoe county) [rated as an EF1 on the Enhanced Fujita Tornado Damage Scale]

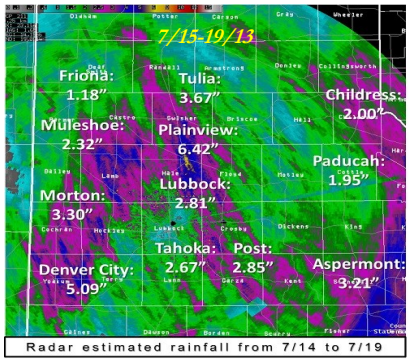
  *Weak tornado on the ground for five minutes near Caprock Canyon State Park (Briscoe county) which damaged a metal barn

- **Severe Storms Rock the Rolling Plains –May 23, 2013**

  *A severe thunderstorm across the central South Plains produced a few landspout type tornadoes across eastern Floyd county and outflow winds up to 80 miles per hour

  *These strong outflow winds caused dirt to become lofted resulting in a haboob (dust storm) which in turn reduced visibilities to one-quarter mile at times

  *Another severe thunderstorm developed across the low Rolling Plains and generated locally heavy rainfall (two to four inches of rainfall), hail up to golf ball size in Spur, TX (Dickens county), wind gusts in excess of 90 miles per hour at the Jayton, TX airport (Kent county) and an EF1 tornado northeast of Girard, TX (Kent county)



- **Unusual Retrograding Low pressure System brought Welcomed Rainfall –July 15th-19th, 2013**

  *A westward moving upper level low pressure system tracked from the northeast U.S. to across west Texas, transporting rich Gulf of Mexico moisture across the South Plains and Rolling Plains and resulting in widespread 1"+ rainfall amounts

  * A few locations received receiving 4"-6" of rain with this storm system

The Cooperative Observer Program: What is it?

In accordance with the National Oceanic and Atmospheric Association (NOAA) National Weather Service (NWS), The Cooperative Observer Program (COOP) is truly the Nation's weather and climate observing network of, by and for the people. More than 11,000 volunteers take observations on farms, in urban and suburban areas, National Parks, seashores, and mountaintops. The data are truly representative of where people live, work and play. The COOP was formally created in 1890 under the Organic Act. Its mission is two-fold:

- To provide observational meteorological data, usually consisting of daily maximum and minimum temperatures, snowfall, and 24-hour precipitation totals, required to define the climate of the United States and to help measure long-term climate trends
- To provide observational meteorological data in near real-time to support forecast, warning and other public service programs of the NWS

Observers record temperature and precipitation daily through use of specialized equipment that is installed by the NWS at a volunteer's home or office. This data is transmitted electronically across the NWS and to the National Climatic Data Center (NCDC) where records are stored permanently.

Many cooperative observers provide additional data, such as evaporation or soil temperatures. Data is transmitted via telephone, computer or, in special cases, by mail. Equipment used at cooperative stations may be owned by the NWS, the observer, or by a company or other government agency, as long as it meets NWS equipment standards. **NWS Lubbock proudly has over 40 COOP volunteers.**

For more information about COOP go to:

http://www.nws.noaa.gov/om/coop/what-is-coop.html

Length of Service Awards

Mr. Travis Smith

50 Years

*Mr. Travis Smith (center) accepts the **50 year** Edward H. Stoll Award for weather observing. The award was presented by Meteorologist -in-Charge Justin Weaver, NWS Lubbock, TX (left) and Service Hydrologist John Lipe, NWS Lubbock, TX (right). Mr. Smith has been observing from Jayton, TX since 1963. Photo by Forecaster Matt Ziebell on 8/2013.*

Mr. Rex Harrison

35 Years

*Mr. Rex Harrison (right) of Floydada, TX, accepts a **35 year** Length of Service Award from Meteorologist-in-Charge Justin Weaver, NWS Lubbock, TX. The observing site is located on Mr. Harrisons' farm 9 miles southeast of Floydada. This site has been in the Harrison family since 1950 when Rex's father took over the observing duties from another farmer. Altogether, Floydada 9 miles SE has been operating since 1937. Photo by OPL Shawn Ellis on 6/2013.*

National Weather Service

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The Staff at NWS Lubbock would like to thank you for reading our Newsletter!

Taken on:

May 20, 2013

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Other notable Contributors

Shawn Ellis

PROMOTIONS, HIRES AND RETIREES

Eric Adams: Promoted to Regional Maintenance Specialist (selected on station)

Charles Aldrich: Meteorologist Intern (new hire from WFO Fairbanks)

Brad Charboneau: Meteorologist Intern (new hire)

Shawn Ellis: Promoted to Observations Program Leader (hired on station)

Jonathan Guseman: General Forecaster (new hire from WFO Melbourne)

Joe Jurecka: Promoted to Senior Forecaster (selected on station)

Mike Samuelson: Electronics Technician (new hire)

Phil Shideler: Regional Maintenance Specialist retired in December 2011

Mike Turner: Observations Program Leader retired in June 2012

CHECK OUT OUR NEW SPOTTER TRAINING COURSES!

Forecasters from the National Weather Service in Lubbock are invited by local emergency management officials to conduct storm spotter training sessions, which help prepare spotters for the upcoming severe weather season. If we do not make it to your particular city, we now offer online courses that you can take! The goal of the training is to train spotters to assist local officials and the National Weather Service with early detection of severe weather and provide ground truth during severe weather events.

The online training will help you:

⇒ **Identify the ingredients needed for organized thunderstorms**

⇒ **Recognize the environmental and visual clues suggestive of severe weather**

⇒ **Learn how to report severe weather**

⇒ **And most importantly learn how to stay safe when storm spotting**

For more information go HERE

SKYWARN

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